ELECTRONICS

6BH11

COMPACTRON TWIN-TRIODE PENTODE

DESCRIPTION AND RATING

The 6BH11 is in a compactron containing two medium-mu triodes and a sharp-cutoff pentode. The pentode is intended primarily for service as a horizontal-deflection oscillator and the triodes for general-purpose applications.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings
Heater Voltage, AC or DC* . . . 6.3±0.6 Volts
Heater Current‡ . . . . 0.8 Amperes
Direct Interelectrode Capacitances§

Triode (Section 1)

Grid to Plate: (T1g to T1p) . . . 1.7 pf
Input: T1g to (T1k + Pk + Pg3 + i.s.) . . . . 3.2 pf
Output: T1p to (T1k + Pk + Pg3 + i.s.) . . . . 1.4 pf

Triode (Section 2)

Grid to Plate: (T2g to T2p) . . . 1.8 pf
Input: T2g to (T2k + Pk + Pg3 + i.s.) . . . . 3.0 pf
Output: T2p to (T2k + Pk + Pg3 + i.s.) . . . . 0.6 pf

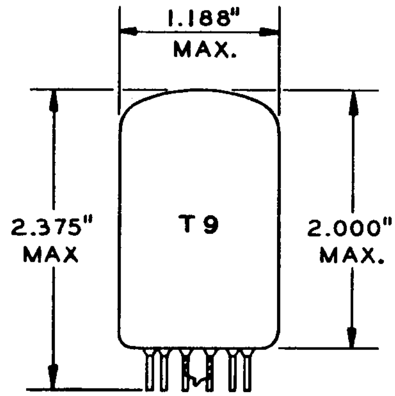
Pentode Section

Grid-Number 1 to Plate: (Pg2 to Pp) . . . . 0.11 pf
Input: Pg1 to (Pk + Pg2 + Pg3 + i.s.) . . . . 5.5 pf
Output: Pp to (Pk + Pg2 + Pg3 + i.s.) . . . . 2.2 pf

MECHANICAL

Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Outline Drawing - EIA 9-58
Maximum Diameter . . . . . . 1.188 Inches
Maximum Over-all Length . . . . 2.375 Inches
Maximum Seated Height. . . . . 2.000 Inches

PHYSICAL DIMENSIONS

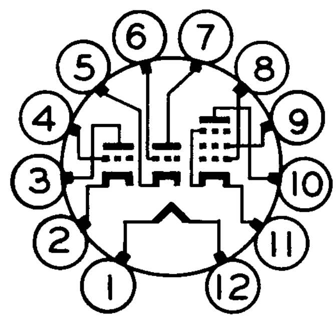


EIA 9-58

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Triode Cathode (Section 2)
Pin 3 - Triode Plate (Section 2)
Pin 4 - Triode Grid (Section 2)
Pin 5 - Triode Cathode (Section 1)
Pin 6 - Triode Grid (Section 1)
Pin 7 - Triode Plate (Section 1)
Pin 8 - Pentode Grid Number 1
Pin 9 - Pentode Grid Number 2 (Screen)
Pin 10 - Pentode Plate
Pin 11 - Pentode Cathode, Grid Number 3, and Internal Shield
Pin 12 - Heater

BASING DIAGRAM



EIA 12FP

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

	Pentode Section Horizontal Oscillator Service¶	Each Triode Section	
DC Plate Voltage	350	330	Volts
Screen Supply Voltage	330	---	Volts
Screen Voltage - See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Peak Negative Grid-Number 1 Voltage	175	---	Volts
Plate Dissipation	2.5	2.5	Watts
Screen Dissipation	0.55	---	Watts
DC Cathode Current	20	---	Milliamperes
Peak Cathode Current	300	---	Milliamperes
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias	2.2	2.2	Megohms
With Cathode Bias	2.2	2.2	Megohms

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

	Pentode Section	Each Triode Section	
Plate Voltage	125	125	Volts
Screen Voltage	125	---	Volts
Grid-Number 1 Voltage	-1.0	-1.0	Volts
Amplification Factor	---	46	
Plate Resistance, approximate	200000	5400	Ohms
Transconductance	7500	8500	Micromhos
Plate Current	12	13.5	Milliamperes
Screen Current	4.0	---	Milliamperes
Grid-Number 1 Voltage, approximate			
Ib = 10 Microamperes	-8	-8	Volts

NOTES

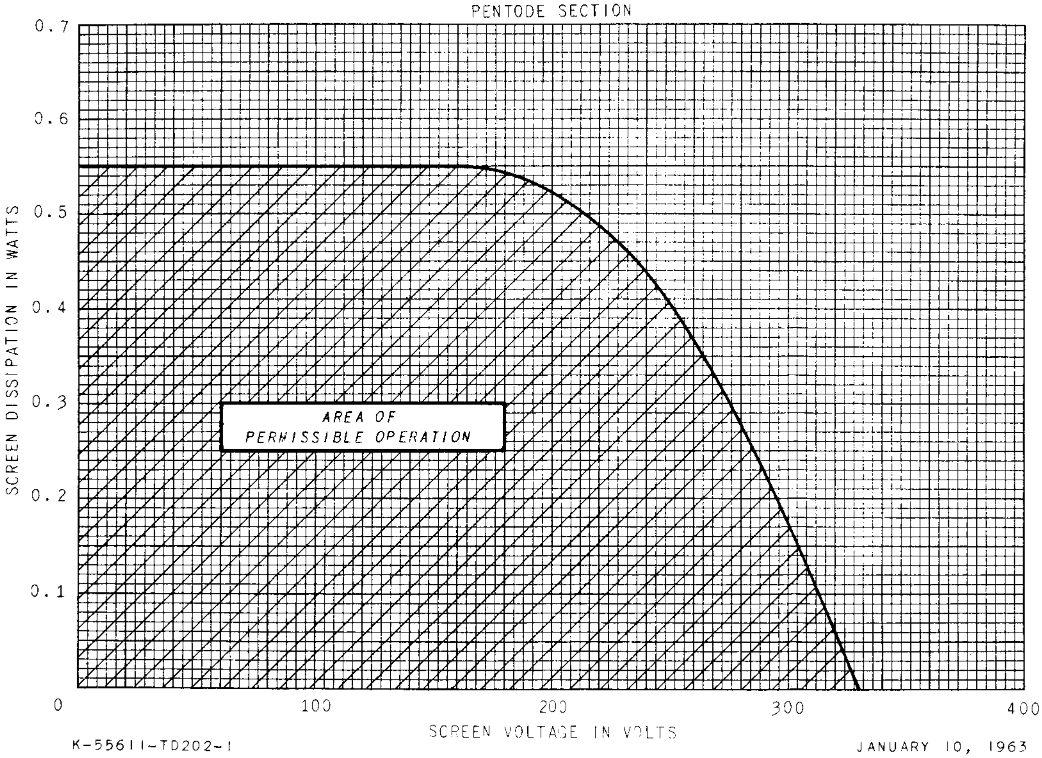
* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

‡ Heater current of a bogey tube at Ef = 6.3 volts.

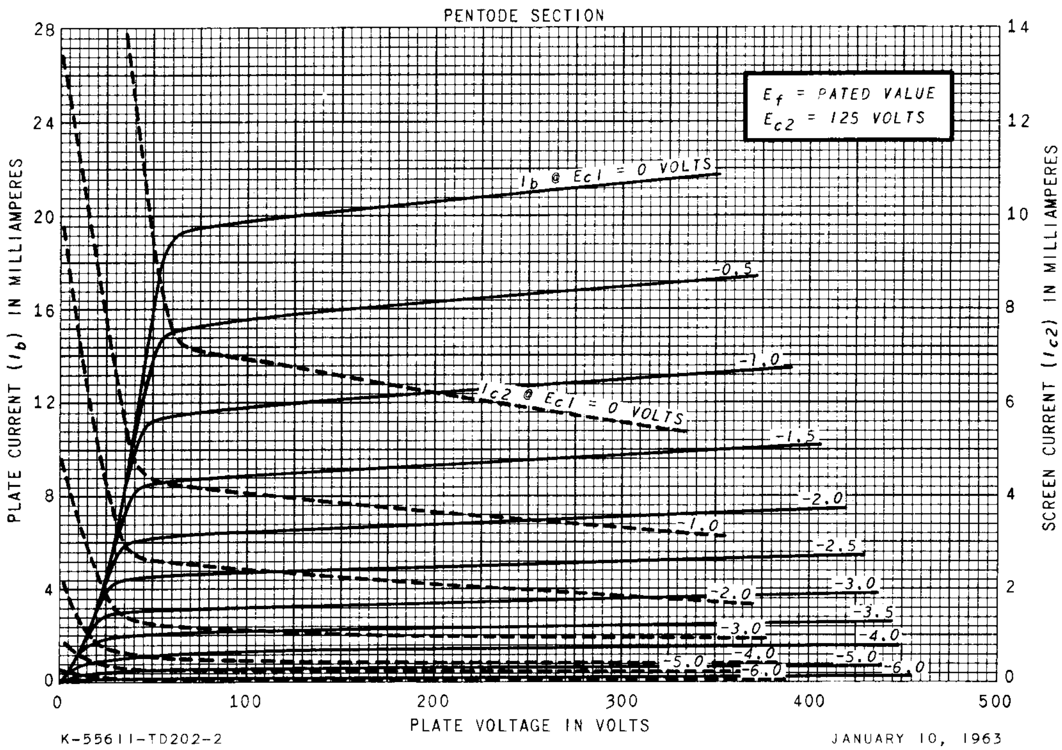
§ Without external shield.

¶ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

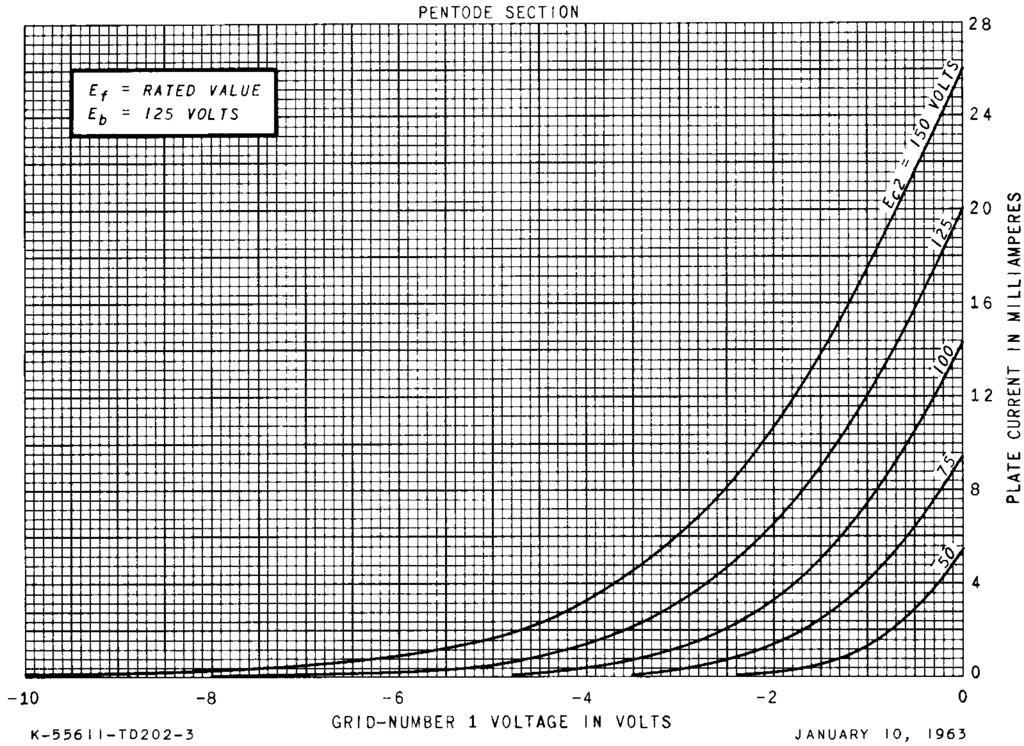
SCREEN RATING CHART



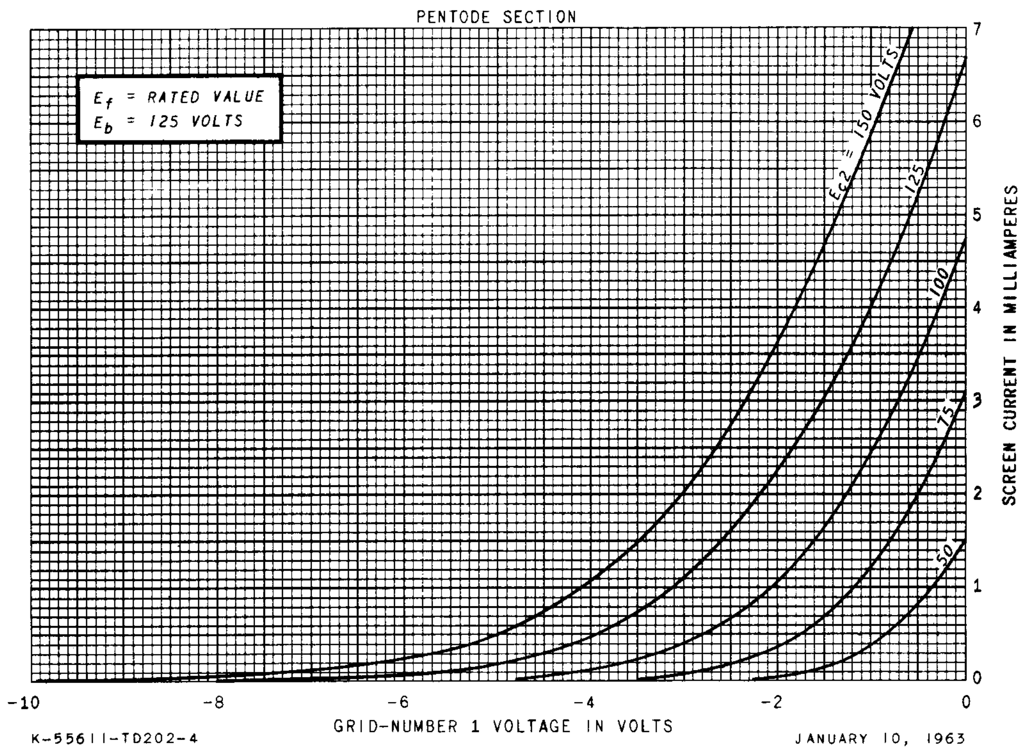
AVERAGE PLATE CHARACTERISTICS



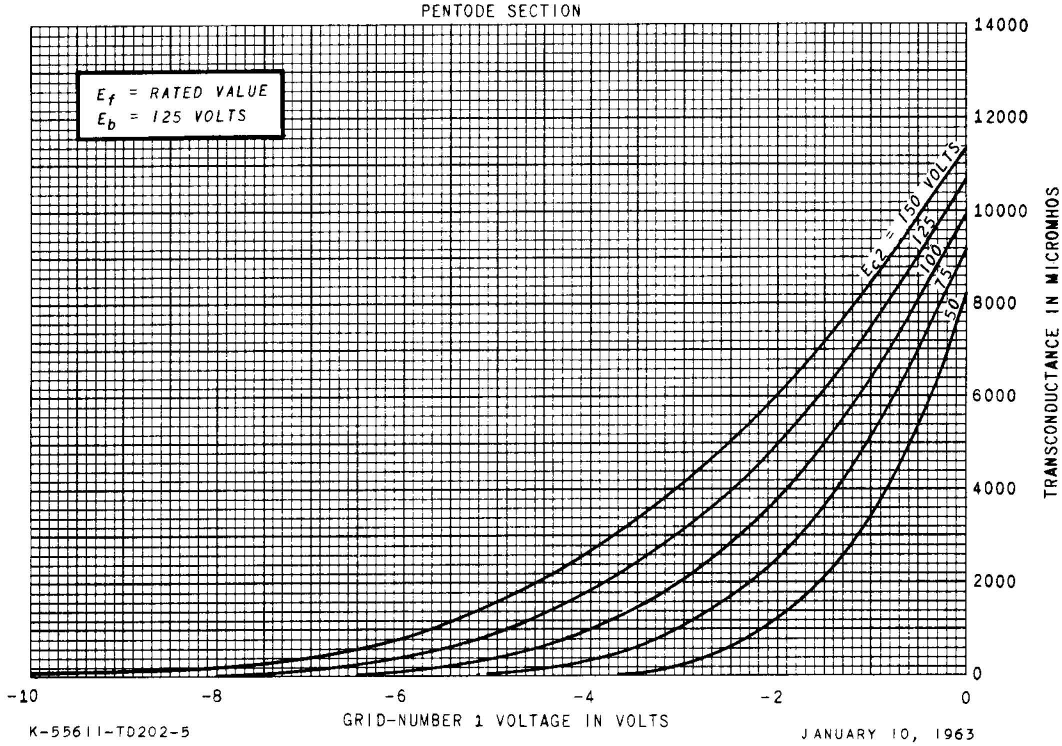
AVERAGE TRANSFER CHARACTERISTICS



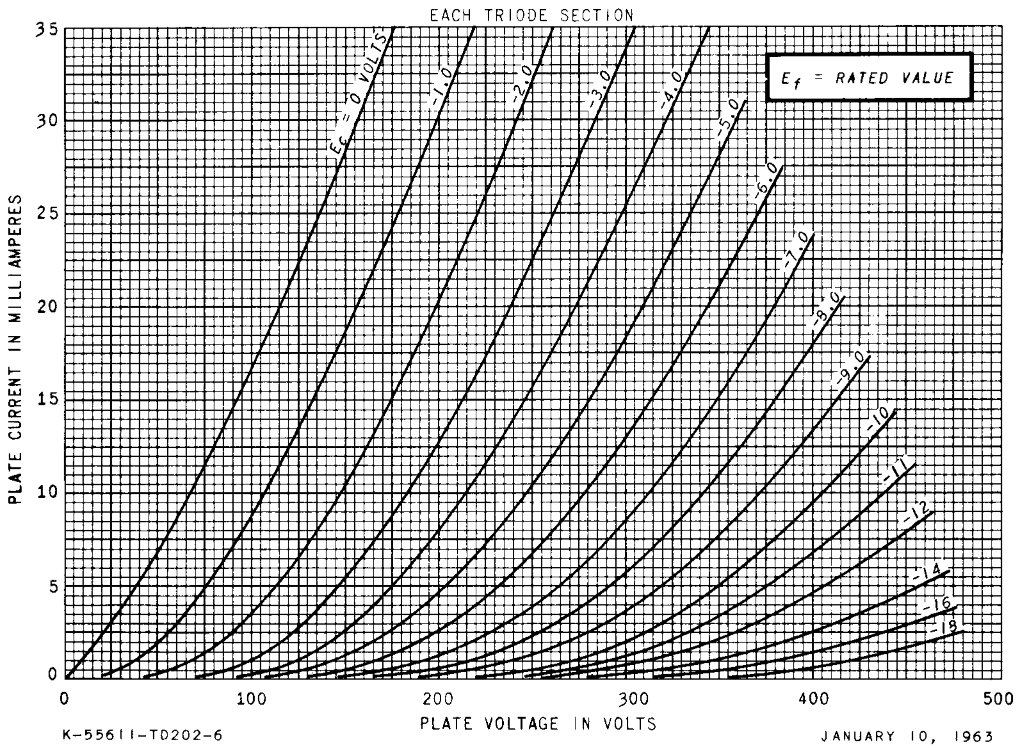
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS

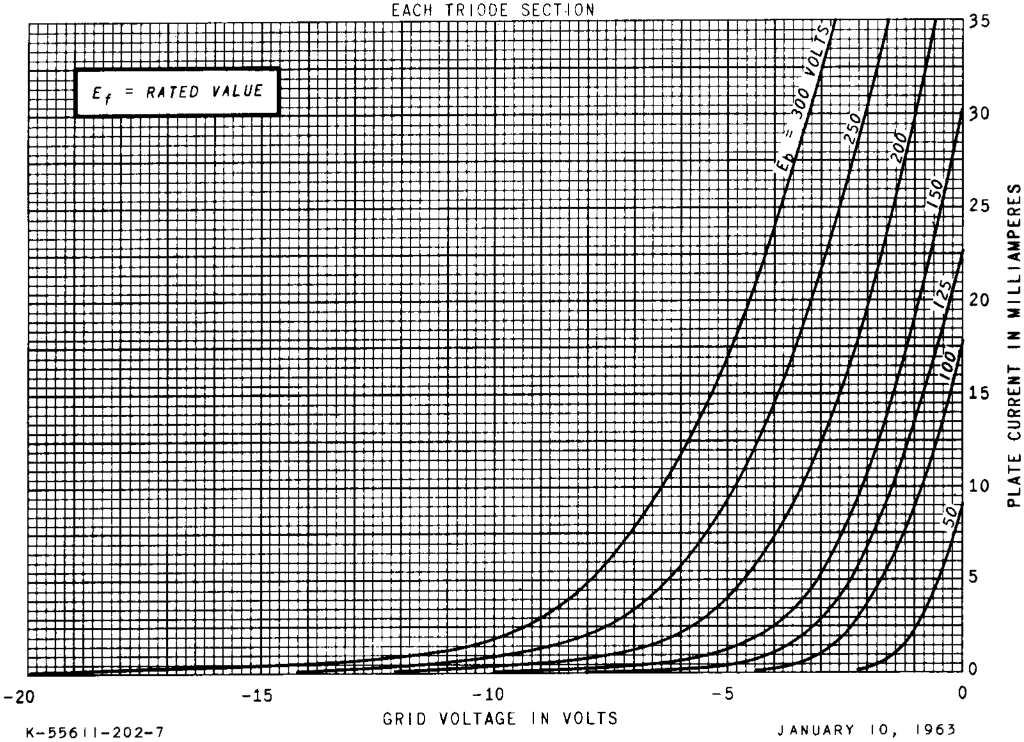


AVERAGE PLATE CHARACTERISTICS



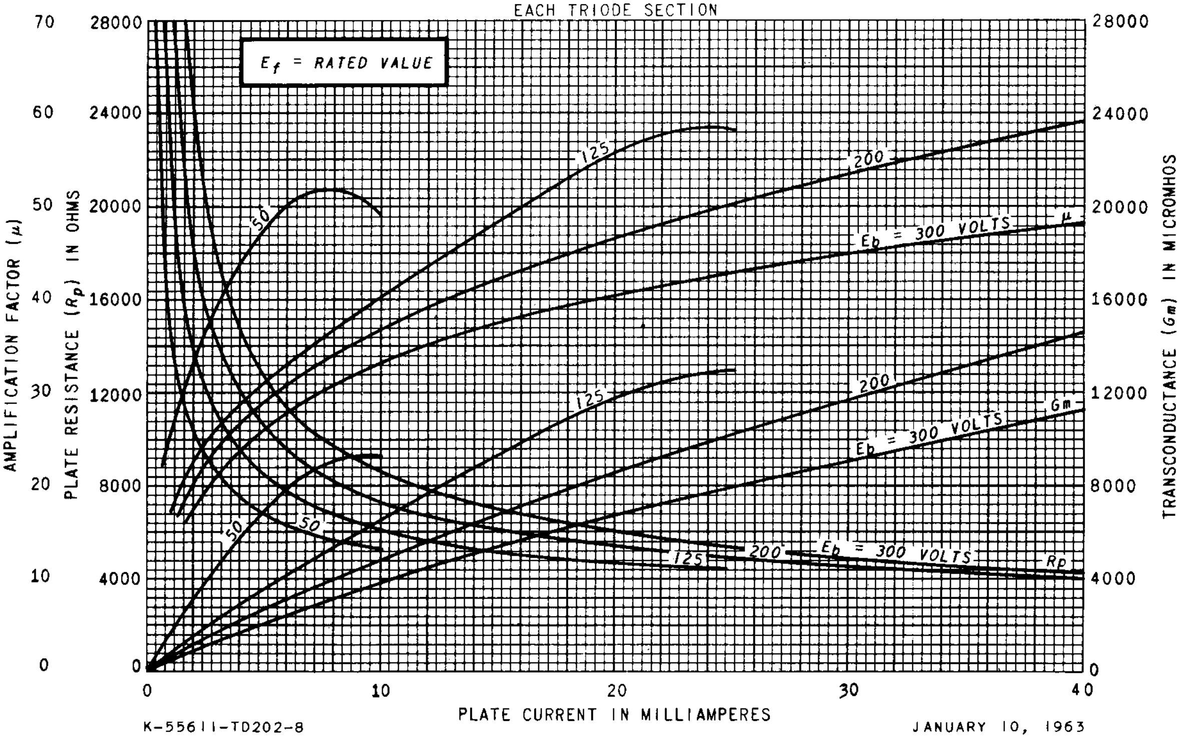
AVERAGE TRANSFER CHARACTERISTICS

EACH TRIODE SECTION



AVERAGE CHARACTERISTICS

EACH TRIODE SECTION



TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky